CONTENTS
for Volume 201

No. 1: August 2001

RESEARCH NOTE

Seibel, Brad A., and David B. Carlini
Metabolism of pelagic cephalopods as a function of habitat depth: a reanalysis using phylogenetically independent contrasts 1

NEUROBIOLOGY AND BEHAVIOR

Herberholz, Jens, and Barbara Schmitz
Signaling *via* water currents in behavioral interactions of snapping shrimp (*Alpheus heterochaelis*) 6

PHYSIOLOGY AND BIOMECHANICS

Reddy, P. Sreenivasula, and B. Kishori
Methionine-enkephalin induces hyperglycemia through eyestalk hormones in the estuarine crab *Scylla serrata* ... 17

Mogami, Yoshihiro, Junko Ishii, and Shoji A. Baba
Theoretical and experimental dissection of gravity-dependent mechanical orientation in gravitactic microorganisms 26

SYMBIOSIS AND PARASITOLOGY

Hanten, Jeffrey J., and Sidney K. Pierce
Synthesis of several light-harvesting complex I polypeptides is blocked by cycloheximide in symbiotic chloroplasts in the sea slug, *Elysia chlorotica* (Gould): A case for horizontal gene transfer between alga and animal?... 34

McCurdy, Dean G.
Asexual reproduction in *Pygospio elegans* Claparède (Annelida, Polychaeta) in relation to parasitism by *Lepocreadium setiferoides* (Miller and Northup) (Platyhelminthes, Trematoda) 45

DEVELOPMENT AND REPRODUCTION

Stewart-Savage, J., Aimee Phillippi, and Philip O. Yund
Delayed insemination results in embryo mortality in a brooding ascidian 52

CELL BIOLOGY

Ballarin, Loriano, Antonella Franchini, Enzo Ottaviani, and Armando Sabbadin
Morula cells as the major immunomodulatory hemocytes in ascidians: evidences from the colonial species *Botryllus schlosseri* 59

ECOLOGY AND EVOLUTION

Halanych, Kenneth M., Robert A. Feldman, and Robert C. Vrijenhoek
Molecular evidence that *Sclerolinum brattstromi* is closely related to vestimentiferans, not to frenulate pogonophorans (Siboglinidae, Annelida) 65

Ponczek, Lawrence M., and Neil W. Blackstone
Effect of cloning rate on fitness-related traits in two marine hydroids 76

Meidel, Susanne K., and Philip O. Yund
Egg longevity and time-integrated fertilization in a temperate sea urchin (*Strongylocentrotus droebachiensis*) 84

Wares, J. P.
Biogeography of *Asterias:* North Atlantic climate change and speciation 95

SYSTEMATICS

Gershwin, Lisa-ann
Systematics and biogeography of the jellyfish *Aurelia labiata* (Cnidaria: Scyphozoa) 104

* * *

Annual Report of the Marine Biological Laboratory R1

No. 2: October 2001

RESEARCH NOTE

Maier, Ingo, Christian Hertweck, and Wilhelm Boland
Stereochemical specificity of lamoxirene, the sperm-releasing pheromone in kelp (Laminariales, Phaeophyceae) 121

PHYSIOLOGY AND BIOMECHANICS

Johnson, Amy S.
Drag, drafting, and mechanical interactions in canopies of the red alga *Chondrus crispus* 126

Thompson, Joseph T., and William M. Kier
Ontogenetic changes in fibrous connective tissue organization in the oval squid, *Sepioteuthis lessoniana* Lesson, 1830 136
Thompson, Joseph T., and William M. Kier
Ontogenetic changes in mantle kinematics during escape jet locomotion in the oval squid, *Sepioteuthis lessoniana* Lesson, 1830 154
Martinez, Anne-Sophie, Jean-Yves Toullec, Bruce Shillito, Mireille Charmantier-Daures, and Guy Charmantier
Hydromineral regulation in the hydrothermal vent crab *Bythograea thermydron* 167

NEUROBIOLOGY AND BEHAVIOR

Campbell, A. C., S. Coppard, C. D'Abreo, and R. Tudor-Thomas
Escape and aggregation responses of three echinoderms to conspecific stimuli 175
Clay, John R., and Alvin Shrier
Action potentials occur spontaneously in squid giant axons with moderately alkaline intracellular pH ... 186

SYSTEMATICS

Dahlgren, Thomas G., Bertil Åkesson, Christoffer Schander, Kenneth M. Halanych, and Per Sundberg
Molecular phylogeny of the model annelid *Ophryotrocha* 193

ECOLOGY AND EVOLUTION

Rondeau, Amélie, and Bernard Sainte-Marie
Variable mate-guarding time and sperm allocation by male snow crabs (*Chionoecetes opilio*) in response to sexual competition, and their impact on the mating success of females 204

BIOGRAPHY

Zottoli, Steven J.
The origins of The Grass Foundation 218

SHORT REPORTS FROM THE 2001 GENERAL SCIENTIFIC MEETINGS OF THE MARINE BIOLOGICAL LABORATORY

Featured Report

The Editors
Introduction to the featured report. green fluorescent protein: enhanced optical signals from native crystals 231
Inoué, Shinya, and Makoto Goda
Fluorescence polarization ratio of GFP crystals. 231

Cell Biology

Knudson, Robert A., Shinya Inoué, and Makoto Goda
Centrifuge polarizing microscope with dual specimen chambers and injection ports 234
Tran, P. T., and Fred Chang
Transmitted light fluorescence microscopy revisited. ... 235
Hernandez, R. V., J. M. Garza, M. E. Graves, J. L. Martinez, Jr., and R. G. LeBaron
The process of reducing CA1 long-term potentiation by the integrin binding peptide, GRGDSP, occurs within the first few minutes following theta-burst stimulation. 236
Kuhns, William J., Dario Rusciano, Jane Kaltenbach, Michael Ho, Max Burger, and Xavier Fernandez-Busquets
Up-regulation of integrins α_3 β_1 in sulfate-starved marine sponge cells: functional correlates 238
Brown, Jeremiah R., Kyle R. Simonetta, Leslie A. Sandberg, Phillip Stafford, and George M. Langford
Recombinant globular tail fragment of myosin-V blocks vesicle transport in squid nerve cell extracts 240
Wöllert, Torsten, Ana S. DePina, Leslie A. Sandberg, and George M. Langford
Reconstitution of active pseudo-contractile rings and myosin-II-mediated vesicle transport in extracts of clam oocytes 241
Clay, John R., and Alan M. Kuzirian
A novel, kinesin-rich preparation derived from squid giant axons 243
Weidner, Earl
Microsporidian spore/sporoplasm dynactin in *Spraguea* 245
Conrad, Mara L., R. L. Pardy, and Peter B. Armstrong
Response of the blood cell of the American horseshoe crab, *Limulus polyphemus,* to a lipopolysaccharide-like molecule from the green alga *Chlorella*. ... 246
Silver, Robert
LtB_4 evokes the calcium signal that initiates nuclear envelope breakdown through a multi-enzyme network in sand dollar (*Echinaracnius parma*) cells 248

Developmental Biology

Crawford, Karen
Ooplasm segregation in the squid embryo, *Loligo pealeii* 251
Burbach, J. Peter H., Anita J. C. G. M. Hellemons, Marco Hoekman, Philip Grant, and Harish C. Pant
The stellate ganglion of the squid *Loligo pealeii* as a model for neuronal development: expression of a POU Class VI homeodomain gene, *Rpf-1* 252

Link, Brian A.
Evidence for directed mitotic cleavage plane reorientations during retinal development within the zebrafish 254
Smith, Ryan, Emma Kavanagh, Hilary G. Morrison, and Robert M. Gould
Messenger RNAs located in spiny dogfish oligodendrocyte processes 255
Hill, Susan D., and Barbara C. Boyer
Phalloidin labeling of developing muscle in embryos of the polychaete *Capitella* sp. I 257
Rice, Aaron N., David S. Portnoy, Ingrid M. Kaatz, and Phillip S. Lobel
Differentiation of pharyngeal muscles on the basis of enzyme activities in the cichlid *Tramitichromis intermedius* 258

Neurobiology

Twig, Gilad, Sung-Kwon Jung, Mark A. Messerli, Peter J. S. Smith, and Orian S. Shirihai
Real-time detection of reactive oxygen intermediates from single microglial cells 261
Silver, Robert B., Mahlon E. Kriebel, Bruce Keller, and George D. Pappas
Porocytosis: Quantal synaptic secretion of neurotransmitter at the neuromuscular junction through arrayed vesicles 263
Chappell, Richard L., and Stephen Redenti
Endogenous zinc as a neuromodulator in vertebrate retina: evidence from the retinal slice 265
Shashar, Nadav, Douglas Borst, Seth A. Ament, William M. Saidel, Roxanna M. Smolowitz, and Roger T. Hanlon
Polarization reflecting iridophores in the arms of the squid *Loligo pealeii* 267
Chiao, Chuan-Chin, and Roger T. Hanlon
Cuttlefish cue visually on area—not shape or aspect ratio—of light objects in the substrate to produce disruptive body patterns for camouflage 269
Errigo, M., C. McGuiness, S. Meadors, B. Mittmann, F. Dodge, and R. Barlow
Visually guided behavior of juvenile horseshoe crabs . . . 271
Meadors, S., C. McGuiness, F. A. Dodge, and R. B. Barlow
Growth, visual field, and resolution in the juvenile *Limulus* lateral eye 272
Kozlowski, Corinne, Kara Yopak, Rainer Voigt, and Jelle Atema
An initial study on the effects of signal intermittency on the odor plume tracking behavior of the American lobster, *Homarus americanus* 274
Hall, Benjamin, and Kerry Delaney
Cholinergic modulation of odor-evoked oscillations in the frog olfactory bulb 276
Zottoli, S. J., D. E. W. Arnolds, N. O. Asamoah, C. Chevez, S. N. Fuller, N. A. Hiza, J. E. Nierman, and L. A. Taboada
Dye coupling evidence for gap junctions between supramedullary/dorsal neurons of the cunner, *Tautogolabrus adspersus* 277
Kaatz, Ingrid M., and Phillip S. Lobel
A comparison of sounds recorded from a catfish (*Orinocodoras eigenmanni*, Doradidae) in an aquarium and in the field 278
Fay, R. R., and P. L. Edds-Walton
Bimodal units in the torus semicircularis units of the toadfish (*Opsanus tau*) 280

Mariculture

Mensinger, Allen F., Katherine A. Stephenson, Sarah L. Pollema, Hazel E. Richmond, Nichole Price, and Roger T. Hanlon
Mariculture of the toadfish *Opsanus tau* 282
Rieder, Leila E., and Allen F. Mensinger
Strategies for increasing growth of juvenile toadfish 283
Chikarmane, Hemant M., Alan M. Kuzirian, Ian Carroll, and Robbin Dengler
Development of genetically tagged bay scallops for evaluation of seeding programs 285

Ecology and Population Biology

Williams, Libby, G. Carl Noblitt IV, and Robert Buchsbaum
The effects of salt marsh haying on benthic algal biomass 287
Hinckley, Eve-Lyn S., Christopher Neill, Richard McHorney, and Ann Lezberg
Dissolved nitrogen dynamics in groundwater under a coastal Massachusetts forest 288
Hauxwell, Alyson M., Christopher Neill, Ivan Valiela, and Kevin D. Kroeger
Small-scale heterogeneity of nitrogen concentrations in groundwater at the seepage face of Edgartown Great Pond 290
Novak, Melissa, Mark Lever, and Ivan Valiela
Top down *vs.* bottom-up controls of microphytobenthic standing crop: role of mud snails and nitrogen supply in the littoral of Waquoit Bay estuaries 292
Fila, Laurie, Ruth Herrold Carmichael, Andrea Shriver, and Ivan Valiela
Stable N isotopic signatures in bay scallop tissue, feces, and pseudofeces in Cape Cod estuaries subject to different N loads 294
Grady, Sara P., Deborah Rutecki, Ruth Carmichael, and Ivan Valiela
Age structure of the Pleasant Bay population of *Crepidula fornicata:* a possible tool for estimating horseshoe crab age 296

Kuzirian, Alan M., Eleanor C. S. Terry, Deanna L. Bechtel, and Patrick I. James
Hydrogen peroxide: an effective treatment for ballast water 297

Oral Presentations

Published by title only 300

No. 3: December 2001

REVIEW

Johnsen, Sönke
Hidden in plain sight: the ecology and physiology of organismal transparency 301

RESEARCH NOTE

Hibbett, David S., and Manfred Binder
Evolution of marine mushrooms 319

CELL BIOLOGY

Leys, Sally P., and Bernard M. Degnan
Cytological basis of photoresponsive behavior in a sponge larva 323

PHYSIOLOGY AND BIOMECHANICS

Shimomura, Osamu, Per R. Flood, Satoshi Inouye, Bruce Bryan, and Akemi Shimomura
Isolation and properties of the luciferase stored in the ovary of the scyphozoan medusa *Periphylla periphylla* 339

SYMBIOSIS AND PARASITOLOGY

Toller, W. W., R. Rowan, and N. Knowlton
Zooxanthellae of the *Montastraea annularis* species complex: patterns of distribution of four taxa of *Symbiodinium* on different reefs and across depths 348
Toller, W. W., R. Rowan, and N. Knowlton
Repopulation of zooxanthellae in the Caribbean corals *Montastraea annularis* and *M. faveolata* following experimental and disease-associated bleaching 360

ECOLOGY AND EVOLUTION

Helmuth, Brian S. T., and Gretchen E. Hofmann
Microhabitats, thermal heterogeneity, and patterns of physiological stress in the rocky intertidal zone 374
Rossi, Sergi, and Mark J. Snyder
Competition for space among sessile marine invertebrates: changes in HSP70 expression in two Pacific cnidarians 385

DEVELOPMENT AND REPRODUCTION

Bishop, Cory D., and Bruce P. Brandhorst
NO/cGMP signaling and HSP90 activity represss metamorphosis in the sea urchin *Lytechinus pictus* 394
Furuya, Hidetaka, F. G. Hochberg, and Kazuhiko Tsuneki
Developmental patterns and cell lineages of vermiform embryos in dicyemid mesozoans 405
Kossevitch, Igor A., Klaus Herrmann, and Stefan Berking
Shaping of colony elements in *Laomedea flexuosa* Hinks (Hydrozoa, Thecaphora) includes a temporal and spatial control of skeleton hardening 417

NEUROBIOLOGY AND BEHAVIOR

Dufort, Christopher G., Steven H. Jury, James M. Newcomb, Daniel F. O'Grady III, and Winsor H. Watson III
Detection of salinity by the lobster, *Homarus americanus* 424

* * *

Index for Volume 201 435